

CLAIMS

What is claimed is:

1. 1. A solenoid fuel drain valve comprising a valve body, having a drain hole and an air inlet opening, a solenoid coil and a piston, the drain hole having a drain inlet and a drain outlet, and the piston being arranged within the valve body to be moveable between a closed condition, wherein the drain hole and the air inlet opening are sealed, and an open condition, wherein the drain hole and the air inlet opening are open, movement of the piston being controlled by the solenoid.
1. 2. A solenoid fuel drain valve according to claim 1, wherein the valve body defines an interior chamber into which the air inlet opening and the drain hole open.
1. 3. A solenoid fuel drain valve according to claim 1, wherein the valve body comprises an air passage connecting the air inlet opening to an air source.
1. 4. A solenoid fuel drain valve according to claim 1, wherein the valve body comprises a drain passage connecting the drain inlet to the drain outlet.
1. 5. A solenoid fuel drain valve according to any one of the preceding claims, wherein the valve body comprises more than one air inlet opening.
1. 6. A solenoid fuel drain valve according to claim 1, wherein the piston comprises a rod and a head.
1. 7. A solenoid fuel drain valve according to claim 6, wherein the head is attached to the rod.
1. 8. A solenoid fuel drain valve according to claim 6, wherein the head is separate from the rod and moved by means of the rod.

1 9. A solenoid fuel drain valve according to claim 6, wherein the head is adapted
2 to provide a means of sealing at least one of the drain hole and the air inlet opening.

1 10. A solenoid fuel drain valve according to claim 9, wherein the head is adapted
2 to seal both of the drain hole and the air inlet opening.

1 11. A solenoid fuel drain valve according to claim 6, wherein the piston comprises
2 two or more heads, each of which may be independently attached to or separate from
3 the rod.

1 12. A solenoid fuel drain valve according to claim 11, wherein the piston
2 comprises a first head attached to the rod and a second head separate from but moved
3 by the rod.

1 13. A solenoid fuel drain valve according to claim 12, wherein the rod comprises a
2 flange extending therefrom to interact with the second head in use and effect
3 movement of the second head upon movement of the rod.

1 14. A solenoid fuel drain valve according to claim 6, wherein the piston is
2 arranged in the valve body such that part at least of the rod extends through the drain
3 hole.

1 15. A solenoid fuel drain valve according to claim 1, comprising a solenoid
2 armature of magnetisable material attached to the piston.

1 16. A solenoid fuel drain valve according to claim 15, wherein the solenoid
2 armature and the piston are arranged such that energization and de-energization of the
3 solenoid effects movement of the solenoid armature, which in turn causes movement
4 of the piston.

1 17. A solenoid fuel drain valve according to claim 15, comprising a solenoid stem
2 of magnetisable material.

1 18. A solenoid fuel drain valve according to claim 17, wherein the solenoid stem
2 is arranged within the valve body such that energization of the solenoid coil causes a
3 magnetic field to be induced in the solenoid stem and the solenoid armature.

1 19. A solenoid fuel drain valve according to claim 1, comprising biasing means to
2 bias the piston into either the closed or open position.

1 20. A solenoid fuel drain valve according to claim 19, wherein the biasing means
2 is one or more spring.

1 21. A solenoid fuel drain valve according to claim 19, wherein the valve further
2 comprises a retaining surface against which the biasing means acts to provide the
3 biasing force.